

July 6, 2023

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC

SUBJECT License Amendment Request
License No. R-120
Docket No. 50-297

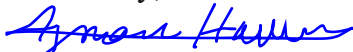
Please find a license amendment request (LAR) for Technical Specification (TS 6.1.1) regarding the training of Level 3 management. This LAR requests extending the time required for the Manager of Engineering and Operations (MEO) to become a certified Senior Reactor Operator (SRO) from the one year to two years. The LAR is based on the typical time needed for training and facility experience to occur before becoming a SRO at our facility and other facilities around the country. In addition, it is consistent with statements made in NUREG 1478 for SRO exam applications.

Furthermore, and as background, over the past few months the MEO at NC State University's Nuclear Reactor Program (NRP) found it difficult to qualify as an SRO due to personal and medical reasons, which required an extended leave period. Beginning last April, the NRP immediately proceeded to appoint an Acting MEO and also proceeded to secure approval of NC State University safety committees for this LAR. Therefore, no impact has been observed to the safe, secure, and efficient operation of the facility. However, to address and remedy such situations, the above LAR to TS 6.1.1 is requested.

If you have any questions regarding this report or require additional information, please contact Gerald Wicks, Acting Manager of Engineering and Operations, at (919) 515-4601 or wicks@ncsu.edu.

I declare under penalty of perjury that the foregoing is true and correct. Executed on 6 July 2023.

Sincerely,



Ayman I. Hawari, Ph.D.
Director, Nuclear Reactor Program

Enclosures:

- Attachment 1: Technical Specification Amendment 20 Line Changes and Justification
- Attachment 2: Technical Specifications Amendment 20 (affected pages with change bars)
- Attachment 3: Technical Specifications Amendment 20 (affected pages clean copy)

Attachment 1:

Technical Specification Amendment 20 Line Changes and Justification

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6 July 2023

Changes to the Technical Specifications for the North Carolina State University PULSTAR Reactor are described below. Each change is noted along with justification of the change.

1. Cover sheet
Amendment number is advanced to “20” and submittal date is revised.
2. Header on revised pages were changed to Amendment 20 and the submittal date.
3. Page 42 – TS 6.1.1 – Level 3 Manager of Engineering and Operations (MEO)

The requirement for the MEO be certified as a SRO is changed. The current TS states the MEO is to be certified as a SRO within one year of appointment. This is changed to 2 years based on NUREG 1478 “Operator Licensing Examiner Standards for Research and Test Reactors”.

In NUREG 1478 time for experience and training is given in the section titled “Examiner Standard 202N Eligibility Requirements and Guidelines” (ES-202N). ES-202N Section E “Initial License Eligibility Guidelines” Items 2 and 3 for SRO applications state the SRO applicant who is not eligible for the SRO-Instant (SRO-I) application should have a minimum of 1 year of experience as an RO (Reactor Operator) at the facility. The SRO-I eligibility guideline states the applicant should have a minimum of 3 years of nuclear experience and that academic training may be substituted for 2 years of experience.

Training to become an RO or SRO takes up to 1 year. One year of experience is needed as an RO before becoming a SRO giving 2 years for an upgrade from RO to SRO. TS require 6 years of nuclear experience and a degree in engineering or physical science. If an MEO with minimal experience and applicable academic training is hired, 1 more year of experience is needed for the SRO-I exam and another year for training giving 2 years. In either case, 2 years is required to be eligible for the SRO exam.

Level 3 – Manager of Engineering and Operations

The Manager of Engineering and Operations (MEO) performs duties as assigned by the NRP Director associated with the safe and efficient operation of the facility as specified in the facility license and Technical Specifications. The MEO is responsible for coordination of operations, experiments, and maintenance at the facility, including reviews and approvals of experiments as defined in Technical Specification 1.2.9 and 6.5, and making minor changes to procedures as stated in Technical Specification 6.4. The MEO shall receive appropriate facility specific training within three months of appointment and be certified as a Senior Reactor Operator within **two years** of appointment. The minimum qualifications for the MEO are a Bachelor of Science in engineering or physical science and at least six years of nuclear experience related to fission reactor technology. The degree may fulfill up to four years of the required six years of nuclear experience on a one-for-one time basis. The MEO reports to the NRP Director.

Attachment 2:

Technical Specifications Amendment 20 (Affected pages with change bars)

Appendix A

Technical Specifications for the
North Carolina State University
PULSTAR Reactor

Facility License No. R-120

Docket No. 50-297

Amendment No. 20

Date: July 6, 2023

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Level 4 – Operating and Support Staff

This level includes licensed Senior Reactor Operators (SRO), licensed Reactor Operators (RO), and other personnel assigned to perform maintenance and technical support of the facility. Senior Reactor Operators and Reactor Operators are responsible for assuring that operations are conducted in a safe manner and within the limits prescribed by the facility license and Technical Specifications, applicable Nuclear Regulatory Commission regulations, and the provisions of the Radiation Safety Committee and Reactor Safety and Audit Committee. All Senior Reactor Operators shall have three years of nuclear experience and shall have a high school diploma or successfully completed a General Education Development test. A maximum of two years equivalent full-time academic training may be substituted for two years of the required three years of nuclear experience as applicable to research reactors for Senior Reactor Operators. Other Level 4 personnel shall have a high school diploma or shall have successfully completed a General Education Development test. All Level 4 personnel report to the Manager of Engineering and Operations.

Reactor Health Physicist

The Reactor Health Physicist (RHP) is responsible for implementing the radiation protection program and monitoring regulatory compliance at the reactor facility. The RHP shall have a high school diploma or shall have successfully completed a General Education Development test and have three years of relevant experience in applied radiation safety. A maximum of two years equivalent full-time academic training may be substituted for two years of the required three years of experience in radiation safety as

Attachment 3:

**Technical Specifications Amendment 20
(affected pages clean copy)**

Appendix A

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North Carolina State University

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